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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

TRAN, TRANG U

ART UNIT	PAPER NUMBER
2614	7

DATE MAILED: 10/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/746,831

Applicant(s)

TARNOFF ET AL.

Examiner

Trang U. Tran

Art Unit

2614

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4,5,6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-2, 4, 6, 8, 10, 12-13 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Gunday et al. (US Patent No. 5,548,327).

In considering claim 1, Gunday et al discloses all the claimed subject matter, note 1) the claimed a plurality of reprogrammable circuit elements configured to receive digital data corresponding to film image pixels and perform one or more film conversion processing steps on the film image pixels using digital technology is met by the video enhancement circuit 18 which is coupled to frame memory 16 and to digital signal processor 52 and is adapted to enhance the digitized pixels based on the specific enhancement function selected (Figs. 4 and 6, col. 13, line 29 to col. 15, line 7 and col. 9, lines 14-36), 2) the claimed a supervisor control circuit configured to communicate with and instruct the plurality of reprogrammable circuit elements on sequencing of the film conversion processing steps is met by the digital signal processor 52 which is coupled to image projector 13, image pickup system 15, digital frame memory 16 and video enhancement circuit 18, and is adapted to control the operation of the digital video system (Fig. 6, col. 16, line 14 to col. 17, line 14), and 3) the claimed a formatter configured to receive one or more outputs from the plurality of reprogrammable circuit

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elements and produce one or more digital motion picture files is met by the video output circuit 20 which is coupled to video enhancement circuit 18, and is adapted to produce one or more video output signals (Fig. 6, col. 16, lines 29-47 and col. 8, lines 42-65).

In considering claim 2, the claimed wherein software codes are used to reconfigure one or more of the reprogrammable circuit elements to support a different film conversion processing step is met by the look-up table generator 18a which is implemented by software executed on a general purpose processor and the look-up table 18b which may be implemented with standard RAM devices or ROMs (Fig. 4, col. 13, line 66 to col. 14, line 62).

In considering claim 4, the claimed wherein the reprogrammable circuit elements are digital signal processors is met by the is met by the video enhancement circuit 18 which includes the look-up tables 18a and 18 is adapted to receive the digital signals and digitally process them, therefore it is a DSP (Figs. 4 and 6, col. 13, line 66 to col. 14, line 62 and col. 9, lines 14-36).

In considering claim 6, the claimed wherein at least one of the digital motion picture files is processed by a digital-to-analog converter for display on a video monitor is met by the video output circuit 20 which is comprised of a digital to analog converter to convert the digital frame data back to analog form (Figs. 2 and 6, col. 8, lines 42-65).

In considering claim 8, the claimed wherein reconfiguration occurs during a film conversion session is met by is met by the digital signal processor 52 which is coupled to image projector 13, image pickup system 15, digital frame memory 16 and video

enhancement circuit 18, and is adapted to control the operation of the digital video system (Fig. 6, col. 16, line 14 to col. 17, line 14).

In considering claim 10, Gunday et al discloses all the claimed subject matter, note 1) the claimed using mechanical and optical devices to provide images from a sequence of film frames to two or more photo-sensor arrays is met by the film transport mechanism 19 and the image pickup system 15 which is optically coupled to image projector 13 and is adapted to receive the illuminated image of the film frame produced by image projector 13 and to generate a video signal representing that image (Figs. 2 and 6, col. 7, line 10 to col. 8, line 11), 2) the claimed controlling the operations of the photo-sensor arrays to be synchronous with movement of the film frames is met by, 3) the claimed digitizing analog signals produced by the two or more photo-sensor arrays is met by the digital signal processor 52 which is coupled to image projector 13, image pickup system 15, digital frame memory 16 and video enhancement circuit 18, and is adapted to control the operation of the digital video system (Fig. 6, col. 16, line 14 to col. 17, line 14), 4) the claimed providing the digitized analog signals to a digital processing core for one or more film processing functions is met by the video enhancement circuit 18 which is coupled to frame memory 16 and to digital signal processor 52 and is adapted to enhance the digitized pixels based on the specific enhancement function selected (Figs. 4 and 6, col. 13, line 29 to col. 15, line 7 and col. 9, lines 14-36), and 5) the claimed manipulating one or more outputs from the digital-processing core to produce a digital motion picture file conforming to a standard format is met by the video output circuit 20 which is coupled to video enhancement circuit 18, and is adapted to

produce one or more video output signals (Fig. 6, col. 16, lines 29-47 and col. 8, lines 42-65).

Claim 12 is rejected for the same reason as discussed in claim 2.

In considering claim 13, the claimed wherein the digital processing core is reconfigured to adapt to a change in the standard format of the digital motion picture file is met by the video output circuit 20 which can produce one or more video output signals in a respective format for display such as a standard format RS-170 composite video signal at a standard 525/60 Hz line rate or a "Hi-line" composite video signal at twice the standard line rate or a standard "D-2" format digital video signal (Figs. 2 and 6, col. 8, lines 41-65).

In considering claim 16, Gunday et al discloses all the claimed subject matter, note 1) the claimed a platform supporting film reels is met by the film transport mechanism 19 which are mounted a supply reel 19s containing film 14 to be viewed and a take-up reel 19t, a sprocket 34 (Figs. 2, col. 7, lines 10-30), 2) the claimed a scanning module separate from said platform comprising an illuminating subassembly, a film guide subassembly, and an image subassembly is met by the image projector 13 which is optically coupled to film transport mechanism 19, and is adapted to project, for a transitory duration, an illuminated image of a film frame, one frame at a time (Figs. 2 and 3, col. 7, lines 31-54 and col. 10, line 11 to col. 11, line 48), 3) the claimed said illumination subassembly including a lamp is met by the strobe light 32 (Fig. 3, col. 11, lines 49-57), 4) the claimed said film guide subassembly including a guide having a slit over which said film passes, said slit being illuminated by said illumination subassembly

is met by the strobe generator 30 which is electrically coupled to counter 28 and camera 36, and is adapted to generate a strobe pulse of a precise, transitory duration in order to illuminate a strobe light (Fig. 3, col. 10, line 60 to col. 11, line 48), 5) the claimed said imaging subassembly including an array of photosensitive detectors that receive light that passes through said slit and said film and outputs electrical analog signals corresponding to respective pixels in said film image is met by the image pickup system 15 which is optically coupled to image projector 13 and is adapted to receive the illuminated image of the film frame produced by image projector 13 and to generate a video signal representing that image (Figs. 2 and 3, col. 7, line 10 to col. 8, line 11), 6) the claimed an analog-to-digital converter configured to produce digital values to represent said analog signals is met by the analog to digital converter 50 (Fig. 6, col. 15, line 61 to col. 16, line 4), 7) the claimed a plurality of reprogrammable circuit elements configured to receive digital data corresponding to film image pixels and perform one or more film conversion processing steps on the film image pixels using digital technology is met by the video enhancement circuit 18 which is coupled to frame memory 16 and to digital signal processor 52 and is adapted to enhance the digitized pixels based on the specific enhancement function selected (Figs. 4 and 6, col. 13, line 29 to col. 15, line 7 and col. 9, lines 14-36), 8) the claimed a supervisor control circuit configured to communicate with and instruct the plurality of reprogrammable circuit elements on sequencing of the film conversion processing steps is met by the digital signal processor 52 which is coupled to image projector 13, image pickup system 15, digital frame memory 16 and video enhancement circuit 18, and is adapted to control the

operation of the digital video system (Fig. 6, col. 16, line 14 to col. 17, line 14), and 9) the claimed a formatter configured to receive one or more outputs from the plurality of reprogrammable circuit elements and produce one or more digital motion picture files is met by the video output circuit 20 which is coupled to video enhancement circuit 18, and is adapted to produce one or more video output signals (Fig. 6, col. 16, lines 29-47 and col. 8, lines 42-65).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gunday et al. (US Patent No. 5,548,327) in view of Saito (US Patent No. 5,838,363).

In considering claim 7, Gunday et al disclose all the limitations of the instant invention as discussed in claim 1 above, except for providing the claimed wherein at least one of the digital motion picture files is provided to a digital monitor for viewing. Saito teaches that the image reading device 10 transports the photographic film 114 in a predetermined direction (hereinafter referred to as an image pickup direction), and sequentially reads film images which are passing a predetermined line by a CCD line sensor 14, the image data of the read film images are output to **an external image receiving device 50 such as a personal computer**, so that the image data of the film image can be recorded in an external recording device (not show), and **the film image**

can be displayed on a monitor 50A of the image receiving device 50 (Fig. 1, col. 5, lines 33-58). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the computer monitor as taught by Saito into Gunday et al's system in order to increase the flexibility of the system by displaying the image data of the film image on the digital monitor such as computer monitor.

5. Claims 3, 5, 9, 11 and 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gunday et al. (US Patent No. 5,548,327).

In considering claim 3, Gunday et al disclose all the limitations of the instant invention as discussed in claim 1 above, except for providing the claimed wherein the reprogrammable circuit elements are field programmable gate arrays. The capability of using field programmable gate arrays for reprogrammable circuit is old and well known in the art. Therefore, the Official Notice is taken. It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the old and well known field programmable gate arrays into Gunday et al's system in order to define whether the configuration is maintained when the power is removed or whether the configuration must be reloaded on during power on.

In considering claim 5, Gunday et al disclose all the limitations of the instant invention as discussed in claim 1 above, except for providing the claimed wherein the number of reprogrammable circuit elements is chosen to trade-off throughput and cost. Choosing the number of reprogrammable circuit elements to trade-off throughput and cost is old and well known in the art. Therefore, the Official Notice is taken. Notoriously well known designer to strike a balance between performance and cost and it would

have been obvious to one of ordinary skill in the art at the time of the invention to do so depending upon amount of available resources.

In considering claim 9, Gunday et al disclose all the limitations of the instant invention as discussed in claim 1 above, except for providing the claimed wherein reconfiguration is used to trade-off complexity of film conversion processing steps and throughput rates of the one or more digital motion picture files. Using reconfiguration to trade-off complexity of film conversion processing steps and throughput rates of the one or more digital motion picture files is old and well known in the art. Therefore, the Official Notice is taken. Notoriously well known designer to strike a balance between performance and cost and it would have been obvious to one of ordinary skill in the art at the time of the invention to do so depending upon amount of available resources.

Claim 11 is rejected for the same reason as discussed in claims 3 and 4.

In considering claim 14, Gunday et al discloses all the claimed subject matter, note 1) the claimed using photosensitive detectors to produce electrical signals corresponding to film pixels is met by the image pickup system 15 which is optically coupled to image projector 13 and is adapted to receive the illuminated image of the film frame produced by image projector 13 and to generate a video signal representing that image (Figs. 2 and 3, col. 7, line 10 to col. 8, line 11), 2) the claimed coupling analog-to-digital converters to the photosensitive detectors to digitize the electrical signals is met by the analog to digital converter 50 (Fig. 6, col. 15, line 61 to col. 16, line 4), and 3) the claimed customizing the programmable electronic circuits using software codes to perform one or more film conversion functions on the digitized electrical signals is met

by the video enhancement circuit 18 which is coupled to frame memory 16 and to digital signal processor 52 and is adapted to enhance the digitized pixels based on the specific enhancement function selected (Figs. 4 and 6, col. 13, line 29 to col. 15, line 7 and col. 9, lines 14-36). However Gunday et al explicitly does not disclose the claimed scaling the number of programmable electronic circuit elements in the film conversion device based on cost constraints. Scaling the number of programmable electronic circuit elements in the film conversion device based on cost constraints is old and well known in the art. Therefore, the Official Notice is taken. Notoriously well known designer to strike a balance between performance and cost and it would have been obvious to one of ordinary skill in the art at the time of the invention to do so depending upon amount of available resources.

Claim 15 is rejected for the same reason as discussed in claim 2.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Nakamura et al. (US Patent No. 6,538,717 B2) disclose method of image reading by one time to-and-fro scanning.

Ochi et al. (US Patent No. 6,335,758 B1) disclose digital camera employing a line sensor with aspect ratio compensation mechanism.

Kunishige et al. (US Patent No. 6,256,056 B1) disclose image input apparatus which controls charge accumulation of line sensor in association with intermittent scan motion of scanning means.

Imamura et al. (US Patent No. 6,297,872 B1) disclose image forming apparatus.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Trang U. Tran** whose telephone number is **(703) 305-0090**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **John W. Miller**, can be reached at **(703) 305-4795**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231


or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

TT TT
September 26, 2003


JOHN MILLER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600